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EXAMINER	
BLAIR, KILE O	

ART UNIT	PAPER NUMBER
2615	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,107	SCHMIDT ET AL.	
	Examiner	Art Unit	
	Kile O. Blair	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/31/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by (E.D. Scheirer: "The MPEG-4 Structured Audio Standard" ACOUSTICS, SPEECH AND SIGNAL PROCESSING, 1998. PROCEEDINGS OF THE 1998 IEEE INTERNATIONAL CONFERENCE ON SEATTLE, WA. USA, 12-15 May 1998, vol. 6, pages 3801-3804- hereinafter as “IEEE”).

Regarding claim 1, IEEE teaches a method for coding impulse responses of audio signals (coding flat speech with a synthetic reverb, IEEE, pg. 3803, right hand column, ¶ 4), wherein said impulse responses allow the reproduction of sound signals corresponding to a certain room characteristic (impulse response that creates a particular reverberation effect, IEEE, pg. 3803, left hand column, ¶ 2), comprising: generating an impulse response of a room for a sound source (coding flat speech with a synthetic reverb, IEEE, pg. 3803, right hand column, ¶ 4); and inserting parameters representing said generated impulse response into multiple successive control parameter fields (audio samples which are blocks of floating point data which make up a bit stream header; the bit stream contains several simple parameters for algorithmic

modification, IEEE, pg. 3803, left hand column, ¶ 2), wherein a first control parameter field contains information about the number and content of the following control parameter fields (directions showing how they are top be configured for a particular synthesis session, IEEE, pg. 3803, left hand column, ¶ 2).

Regarding claim 2, IEEE teaches the method according to claim 1, wherein the sound signals are encoded using the MPEG 4 standard (MPEG-4 used for coders, IEEE, pg. 3801, left hand column, ¶ 2) and the room impulse response is transmitted via the Structured Audio interface in the PROTO mechanism (the commands for controlling the synthesizers are created by the schedule which is the main control process of the Structured Audio system, IEEE, pg. 3803, left hand column, ¶ 4) using multiple successive field updates for the params[128]-field (blocks of sample data, carefully configured for optimum wavetable synthesis, may be transmitted in the MPEG-4 Structured Audio Sample Bank Format, IEEE, pg. 3803, left hand column, ¶ 2).

Regarding claim 6, IEEE teaches the method for decoding impulse responses of audio signals (coding flat speech with a synthetic reverb, IEEE, pg. 3803, right hand column, ¶ 4; and decoding of bit stream, IEEE, pg. 3802, right hand column, ¶ 3), wherein said impulse responses allow the reproduction of sound signals corresponding to a certain room characteristic (impulse response that creates a particular reverberation effect, IEEE, pg. 3803, left hand column, ¶ 2), comprising: separating parameters representing an impulse response from multiple successive control parameter fields (audio samples which are blocks of floating point data which make up a bit stream header; the bit stream contains several simple parameters for algorithmic

modification, IEEE, pg. 3803, left hand column, ¶ 2), wherein a first control parameter field contains information about the number and content of the following control parameter fields (directions showing how they are top be configured for a particular synthesis session, IEEE, pg. 3803, left hand column, ¶ 2); storing the separated parameters in an additional memory of a node (sample data, , IEEE, pg. 3802, right hand column, fig. 1); and using said stored parameters for the calculation of the room characteristic (synthesis engine , IEEE, pg. 3802, right hand column, fig. 1).

Regarding claim 7, IEEE teaches the method according to claim 6, wherein the sound signals are decoded using the MPEG 4 standard (MPEG-4 used for coders and inherently decoders, IEEE, pg. 3801, left hand column, ¶ 2) and the room impulse response is received via the Structured Audio interface in the PROTO mechanism (the commands for controlling the synthesizers are created by the schedule which is the main control process of the Structured Audio system, IEEE, pg. 3803, left hand column, ¶ 4) using multiple successive field updates for the params[128]-field (directions showing how they are top be configured for a particular synthesis session, IEEE, pg. 3803, left hand column, ¶ 2).

Claim 11 is substantially similar to claim 1 and is rejected for the same reasons since there must be an apparatus or computer program embodied on a computer readable medium to carry out the method as disclosed by IEEE in claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE in view of (Koenen, Rob. Coding of Moving Pictures and Audio: MPEG-4 Overview (V.21 - Jeju Version). Rep. No. ISO/IEC JTC1/SC29/WG11 N4668., International Organization for Standardization. 2002. 1-79, hereinafter as "Koenen").

Regarding claim 3, IEEE teaches the method according to claim 1.

Although IEEE does not explicitly teach the feature wherein a scalable transmission of the room impulse responses is enabled, Koenen teaches that MPEG-4 coding can be used to create reverb using scalability (Koenen, pg. 64, §12, ¶ 2). It

would have been obvious to use the scalability as disclosed by Koenen in the method of IEEE since using known features of an industry standard to implement the reverberation disclosed by IEEE would have yielded predictable results.

Regarding claim 8, IEEE teaches the method according to claim 6.

Although IEEE does not explicitly teach the feature wherein the room impulse responses are received following a scalable transmission of said room impulse responses, Koenen teaches that MPEG-4 coding can be used to create reverb using scalability (Koenen, pg. 64, §12, ¶ 2). It would have been obvious to use the scalability as disclosed by Koenen in the method of IEEE since using known features of an industry standard to implement the reverberation disclosed by IEEE would have yielded predictable results.

Claims 4, 5, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE in view of Koenen in further view of (Scheirer, Eric D. "Structured audio and effects processing in the MPEG-4 multimedia standard." MULTIMEDIA SYSTEMS 7 (1999): 11-22, hereinafter as “Multimedia Systems”).

Regarding claim 4, IEEE in view of Koenen teaches the method according to claim 3.

Although IEEE in view of Koenen does not explicitly teach the feature wherein in a broadcast mode short versions of room impulse responses are frequently transmitted and a long sequence is less frequently transmitted, Multimedia Systems teaches that, in an MPEG-4 coder, a scene in a large hall will have reverb added, somewhat less reverb

added to dialog, and no reverb added to the music based on the needs of the scene (Multimedia Systems, pg. 16, §3.1, ¶ 2- pg. 17, §3.1, ¶ 2). It would have been obvious to one of ordinary skill in the art to transmit the shorter version of impulse responses more frequently with the motivation of conserving transmission capacity as is done with transmission of few parameters sufficient enough to reproduce the scene as disclosed (Multimedia Systems, pg. 13, §2.3.2, ¶ 1-4).

Regarding claim 5, IEEE in view of Koenen teaches the method according to claim 3.

Although IEEE in view of Koenen does not explicitly teach the feature wherein in an interleaved mode a first part of the room impulse responses is frequently transmitted and the later part of the room impulse responses is less frequently transmitted, Multimedia Systems discloses the interleaving mode of transmitting the timbre of a piano frequently when redundancies exist (Multimedia Systems, pg. 13, §2.3.2, ¶ 1-4). It would have been obvious to one of ordinary skill in the art to apply the same mode to the reverberation effects with the motivation of conserving transmission capacity (Multimedia Systems, pg. 11, §1, ¶ 3- pg. 12, §1, ¶ 3) since Multimedia Systems discloses that the same tool are used for effects processing as the music reproduction (Multimedia Systems, pg. 13, §2.3.2, ¶ 4).

Regarding claim 9, IEEE in view of Koenen teaches the method according to claim 8.

Although IEEE in view of Koenen does not explicitly teach the feature wherein in a broadcast mode short versions of room impulse responses are frequently received

and a long sequence is less frequently received, Multimedia Systems teaches that, in an MPEG-4 coder, a scene in a large hall will have reverb added, somewhat less reverb added to dialog, and no reverb added to the music based on the needs of the scene (Multimedia Systems, pg. 16, §3.1, ¶ 2- pg. 17, §3.1, ¶ 2). It would have been obvious to one of ordinary skill in the art to transmit the shorter version of impulse responses more frequently with the motivation of conserving transmission capacity as is done with transmission of few parameters sufficient enough to reproduce the scene as disclosed (Multimedia Systems, pg. 13, §2.3.2, ¶ 1-4).

Regarding claim 10, IEEE in view of Koenen teaches the method according to claim 8.

Although IEEE in view of Koenen does not explicitly teach the method according to claim 8, wherein in an interleaved mode a first part of the room impulse responses is frequently received and the later part of the room impulse responses is less frequently received, Multimedia Systems discloses the interleaving mode of transmitting the timbre of a piano frequently when redundancies exist (Multimedia Systems, pg. 13, §2.3.2, ¶ 1-4). It would have been obvious to one of ordinary skill in the art to apply the same mode to the reverberation effects with the motivation of conserving transmission capacity (Multimedia Systems, pg. 11, §1, ¶ 3- pg. 12, §1, ¶ 3) since Multimedia Systems discloses that the same tool are used for effects processing as the music reproduction (Multimedia Systems, pg. 13, §2.3.2, ¶ 4).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kile O. Blair whose telephone number is (571) 270-3544. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KB

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615